

Serial No.: 09/699,328
Amendment Dated: November 30, 2004
Reply to Office Action of June 30, 2004

AMENDMENTS TO THE SPECIFICATION:

Please amend the title of invention as rewritten below:

THE ED ERGONOMICALLY DESIGNED WALKER

Please delete the inventor information in toto on page 1 following the title of the invention.

Please delete the field of search information in toto on page 1 following the inventor information.

Please delete the references cited information in toto on page 1 following the field of search information.

Please replace the paragraph on page 1 beginning "When an injury" with the following amended paragraph:

When an injury to the lower leg, knee or foot or a leg amputation occurs, a wheelchair or crutches is the usual means for ambulating. The present invention relates generally to a seated crutch that has handles and is ergonomically designed to promote balance and the natural position of the user.

Please replace the paragraph on page 1 beginning "There are a great" with the following amended paragraph:

When an injury to the lower leg, knee or foot or a leg amputation occurs, a wheelchair or crutches is the usual means for ambulating. There are a great number of orthopedic devices such as crutches and canes, the like of which have been satisfactory only to a certain extent. These devices help an injured person ambulate but do not take into account a person's need for natural positioning and balance while walking. When walking, the human body has its mass in motion. When this happens a number of factors come into play. This is best understood by using the model of a downhill skier. In order for the skier to maintain balance while in motion

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he needs to have a natural stance with his feet slightly apart and he needs to lean forward slightly, bending the ankles, knees and hips with elbows, wrists and hands forward of the hips. This gives the body a slight forward lean with dynamic joint alignment, promoting better balance.

Please replace the paragraph on page 2 beginning "Medical devices" with the following amended paragraph:

Medical devices have been developed to facilitate ambulating. U.S. Patent No. 4,641,882 issued February 10, 1987 to John Young and entitled "Orthopedic [[a]]Appliances" is for a device with a straight vertical seated post with a leg peg to support the injured leg, one or more handles mounted below the seat and a C-shaped leg receiver. ~~The structure is quite simple by nature. A person sits on the seat, rests his foot on the peg and holds the forward and rear handles.~~ Little consideration has been given to the problem of maintaining balance and keeping the body in a natural, flexible stance. ~~Furthermore the foot peg could be detrimental if non-weight bearing of the injured limb is necessary. The straight shaft, although simple, does not address the need for a tip underneath the injured limb to promote balance and stability.~~

Please replace the paragraph on page 2 beginning "U.S. Patent No. 5,524,658" with the following amended paragraph:

U.S. Patent No. 5,524,658 issued June 11, 1996 to Joseph F. Schrader and entitled "~~sit to stand hinged seat walker with pull up handles~~" "Sit To Stand Hinged Seat Walker With Pull-up Handles" also employs a vertical upright post with a planar seat that locks in a vertical position. The user's injured limb is strapped into the leg receiver. The straight V-shaped post from seat to tip is in a vertical line similar to Young's patent. Both of these devices allow the user to rest on the seat while walking.

Please replace the paragraph on page 2 beginning "It is the objective" with the following amended paragraph:

It is the objective of this new and improved invention to provide an improved seated frame with raised forward handle grip bars to promote balance and with a leg cradle that the user may or may not strap on. The leg cradle is positioned in such a way that the injured limb helps promote balance. Due to the ergonomic bends in the walker frame, the seat support is offset from the stabilization foot, allowing the user to walk more normally while supporting the injured limb but not necessarily having to rest on the seat at all times. This balancing frame works similarly to a bicyclist riding along above the seat using his leg muscles to support the upper body, which in turn strengthens muscles.

Please replace the paragraph on page 3 beginning "Young and old" with the following amended paragraph:

~~Young and old alike would benefit from this new improved walker frame.~~

Due to the configuration of the leg cradle, the walker can be easily mounted from an upright position. The walker frame is ~~now safer easier to use~~ because an open leg frame cradles the injured limb ~~and can allows it to~~ be quickly removed if the need should arise.

Please replace the paragraph on page 3 beginning "The present invention relates" with the following amended paragraph:

The present invention relates generally to an ergonomically designed walking system that provides an inexpensive simplified structure consisting essentially of a vertical tubular frame with offset bends, that provides a post and seat with padded handle grips and adjustable padded hand grip bars located at the uppermost end of the walker frame. This tubular frame consists mainly of two tubular support members: the generally V-shaped seat support with handle assembly and the offset frame support post handle assembly located at the upper end with a stabilization foot assembly located at the lower most end. The stabilization foot assembly is locked in

position with a safety collar assembly, which minimizes wear on the adjustment button. Located above this assembly are threaded frame spacers, which maintain the proper distance between these two support members giving and give the walker frame the proper positioning of the seat post over the stabilization foot, which gives the frame in turn, provides for the proper lateral balance for the intended user. These threaded frame spacers line up with the welded reinforcement tubes, which are located in both support members. Button head bolts pass through the welded reinforcement tubes and thread into the female threaded frame spacers. The leg cradle support and pivot flange assembly also rely on the button head bolts and the welded reinforcement tubes for strength and rigidity. The adjustable leg cradle support tube with adjustment holes is located at the uppermost end of the leg cradle pivot flange assembly with the pivoting bracket affixed to the bottom of the padded leg cradle. This padded leg cradle may have a Velcro® strap or it may have a safety breakaway buckle.

Please replace the paragraph on page 3 beginning "The ergonomically designed" with the following amended paragraph:

The ergonomically designed walking frame of the present invention solves a long-standing problem of being able to ambulate with little effort and at the same time being able to have a strong stable stance with balance that allows for proper joint positioning. The joints, muscles and tendons work in a more natural, comfortable state which promotes faster healing because of the user's ability to extend and flex both the non injured limb and the injured limb to thereby maintaining muscle mass and minimizing minimize atrophy. Being able to have extension and flexion helps to promote healing. The prior art is lacking. This walking device may be used in a number of different ways which include helping to rise from a seated position, as a traditional walker with hands on seat and handle grip bars for stability, climbing and going down stairs holding on to rear of the seat with in hand and grip bar with the other hand with the walker frame facing sideways on the steps. One can have the walker frame on the step above while going upstairs or

~~the step below while going downstairs. It may also be used for walking, straddling the walker frame and seat assembly, resting on the seat only when needed. The walker enable the user to stand at a cabinet and have the widely spaced hand grip bars rest against the vertical surface, giving the user the use of his hands to do various tasks such a preparing food, brushing one's teeth or simply preparing a cup coffee. The object of this invention is to provide a simple to use device that is extremely adjustable from ay users of different sizes with varying injuries. This would make it possible for the walker to be rented to those who would only need the device for a short time and then to be recycled back into use for another individual.~~

Please add the following new paragraph after the paragraph beginning "The ergonomically designed":

This walking device may be used in a number of different ways such as: helping to rise from a seated position, as a traditional walker with hands on seat and handle grip bars for stability, and climbing and going down stairs by holding on to rear of the seat with one hand while gripping the bar with the other hand with the walker frame facing sideways on the steps. One can have the walker frame on the step above while going upstairs, or the step below while going downstairs. It may also be used for walking, by straddling the walker frame and seat assembly, while resting on the seat only when needed. The walker enable the user to stand at a cabinet and have the widely spaced hand grip bars rest against a vertical surface, giving the user the use of his hands to do various tasks such a preparing food, brushing one's teeth or simply preparing a cup of coffee. The object of this invention is to provide a simple-to-use, stable device that is extremely adjustable for many users of different sizes with varying injuries. This would make it possible for the walker to be rented to those who would only need the device for a short time and then to be recycled back into use for another individual.

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Please replace the paragraph on page 4 beginning “FIG 1” with the following amended paragraph:

FIG 1 is a ~~side elevational~~ perspective view of the left injured leg walker frame with leg cradle and Velcro® strap or breakaway buckle supporting a phantom person missing a left leg below the knee.

Please replace the paragraph on page 4 beginning “FIG 4” with the following amended paragraph:

FIG. 4 is a rear elevational view of a left injured limb walker frame view of FIG. 3.

Please replace the paragraph on page 4 beginning “FIG. 5” with the following amended paragraph:

FIG. 5 is an enlarged perspective view of the rotation axes of the pivot flange assembly ~~taken along lines 5—5 of FIG. 6~~ with letters B, C & D showing rotation directions of the pivot flange joint. Letter A shows degree hash marks on leg cradle pivot flange assembly.

Please replace the paragraph on page 5 beginning “FIG. 7” with the following amended paragraph:

FIG. 7 is an enlarged perspective view of the padded leg cradle assembly with Velcro® strap ~~taken along lines 7—7 of Fig. 6~~, with letter E showing direction of pivot rotation of leg cradle.

Please replace the paragraph on page 5 beginning “FIG. 8” with the following amended paragraph:

FIG. 8 is a rear elevational view of the FIG. 4 embodiment with wider threaded frame spacers to change the lateral balance point of the walking frame to accommodate a wider stabilization foot. Letter F shows the lateral balance point.

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Please replace the paragraph on page 5 beginning “FIG. 9” with the following amended paragraph:

FIG. 9 is a right elevational view of a walker frame for a right injured leg with letter J[[.]] showing the forward balance point of the frame over the stabilization foot. Letter I shows the padded handgrip bars adjustment rotation.

Please replace the paragraph on page 5 beginning “FIG. 10” with the following amended paragraph:

FIG. 10 is a rear elevational view of the FIG. 6 8 embodiment of a right injured limb walker with shorter frame spacers. Letter G shows a changed lateral balance point from the Fig. 8 lateral balance point.

Please replace the paragraph on page 5 beginning “FIG. 11” with the following amended paragraph:

FIG. 11 is an enlarged side view of the stabilization foot assembly ~~taken along lines 11—11 of FIG. 10 embodiment.~~

Please replace the paragraph on page 5 beginning “FIG. 12” with the following amended paragraph:

FIG. 12 is a rear elevational view of a right injured limb walker with a right leg cradle assembly. Letter H shows the lateral balance point to the left side of the stabilization foot.

Please replace the paragraph on page 5 beginning “FIG. 13” with the following amended paragraph:

FIG. 13 is a side elevational view of a person walking with the left leg supported in a leg cradle.

Please replace the paragraph on page 5 beginning "FIG. 14" with the following amended paragraph:

FIG. 14 is a side elevational view of a person walking with the left leg injured walker frame with no leg cradle. The phantom person is using selective weight bearing on the left injured limb having normal extension flexion of both legs.

Please replace the paragraph on page 5 beginning "FIG. 15" with the following amended paragraph:

FIG. 15 is a side elevational view of a person missing the lower portion of ~~their~~ his left leg using the left injured limb walker frame maintaining normal extension flexion of his right leg.

Please replace the paragraph on page 5 beginning "Referring to the drawings" with the following amended paragraph:

Referring to the drawings in greater detail, Fig. 1 shows an improved ergonomically designed walker frame 51 made according to the invention and supporting a phantom person 42, with ~~their~~ his left leg missing below the knee 43, with the frame 51 coming to rest on a stabilization foot 25, of walker frame 51. The individual is in a natural comfortable stance with his hands 47, gripping padded handgrip bars 54, similar to that of U.S. Pat. No. 4,641,882. This improved walker frame facilitates the ability to control the balance of the individual in relationship to the stabilization foot 25. It should also be noted that the elbows 45[[,]] are at a comfortable distance apart, with the shoulders 40[[,]] facing the direction of movement with a slight forward lean as ~~one~~ the person 42 rests upon the seat assembly 64.

Please replace the paragraph on page 6 beginning "Referring now to Fig. 2" with the following amended paragraph:

Referring now to Fig. 2, the walker 51 is shown in a top view, ~~with an Ed~~ (stands for ergonomic design) ~~walker frame 51, and shows to indicate~~ the relationship between the foot stabilization assembly 25 and the seat assembly 64. The walker frame 51 is comprised principally of two tubular parts 60 and 61. An ergonomically configured offset frame support post 60 ~~has~~ includes a foot assembly 25[[,]] at its lower end and a padded handgrip bar 54a at the its top vertical end. The offset seat post 61 has opposing hand grip bar 54b located at the most top vertical end.

Please replace the paragraph on page 6 beginning "Fig. 3 is a right" with the following amended paragraph:

Fig. 3 is a right side elevational view showing one of two padded handgrip bars 55a located at the upper end of support post 60. The adjustable padded handgrip bar[[s]] 54a ~~are~~ is affixed to the tapered top horizontal end of support post 60 and to the V-shaped seat support 61 with the cap screw 56a located at the lower end of the padded handgrip bar[[s]] 54a. The offset seat support post 61 is generally a V shaped tubular structure with a bicycle seat 64 and is mounted on the highest vertical tapered end of said post with a bicycle seat adjustable mounting bracket 62, which clamps on the forward and aft adjustable seat bars 63.

Please replace the paragraph on page 6 beginning "Fig. 4 is a rear" with the following amended paragraph:

Fig. 4 is a rear elevational view showing padded handgrips 55a and 55b respectively located on the upper horizontal ends of the frame support post 60 and the offset seat post and handle assembly 61[[,]]. ~~with both~~ Both the offset frame support post 60 & offset seat post and handle assembly 61 ~~being~~ are preferably formed of lightweight high strength tubing such as aluminum, stainless steel, titanium, or a lightweight moldable composite material. ~~A bicycle seat assembly 64~~

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~~is mounted to the offset seat post and handle assembly 61. The offset ergonomically formed frame support post 60 with its stabilization foot assembly 25 and is held apart to a desired distance from the V shaped seat support post with handle assembly 61 are held apart to a desire distance by threaded frame spacers 59, to achieve proper lateral distance between offset frame support post 60 & offset seat post and handle assembly 61.~~

Please replace the paragraph on page 7 beginning "Fig. 5 is an enlarged," with the following amended paragraph:

Fig. 5 is an enlarged, detailed view ~~of portions of the taken on lines 5-5 from~~ Fig. 6 embodiment but not showing the padded leg cradle assembly 33. The offset frame support post 60 and the V-shaped offset seat post and handle assembly 61 each have welded reinforced mounting tubes 58 spaced at equal distances apart to give added strength. Button head bolts 57, protruding latterly through these tubes ~~and into the~~ and into the threaded frame spacers 59[[,]] can be tightened to the desired ~~feet~~ pounds degree without crushing or distorting ~~the~~ the frame support post 60 and handle assembly 61. The leg cradle pivot flange with offset bolt assembly 27 attaches to ~~the~~ the seat support 61 using a lengthened button heat bolt 57 protruding through welded reinforcement tubes 58 located on offset seat support post 61, adjacent to gusset 71. Letter A distinguishes shows degree markings and hash marks on the leg cradle pivot flange with offset bolt assembly 27. Letter b shows the lateral rotation of the leg cradle pivot flange with offset bolt assembly 27. Letter C shows the vertical rotation of the leg cradle pivot flange with offset bolt assembly 27. The leg cradle adjustment barrel with holes 29 is inserted into the pivot cap flange 28 and locked into the desired rotation by setscrew 50. Letter D shows the rotation axis of the leg cradle adjustment barrel 29.

Please replace the paragraph on page 7 beginning "Fig. 7, taken" with the following amended paragraph:

Fig. 7, taken from Fig. 6 along lines 7-7 is an shows an enlarged mainly left side view portion of the Fig. 6 embodiment showing in greater detail a padded leg cradle assembly 33, with optional Velcro® strap 34 as shown in use in Fig. 1[.]. This wherein the individual is affixed to the walker frame 51, which in some instances can be beneficial such as in climbing stairs. To secure the frame to the individual, similar to that of U.S. patent 5,178,595, the improved leg cradle 33, has a pivoting bracket 32, attached by means of the button head bolt and Nylock® nut assembly 31 to leg cradle inner support tube with height adjustment spring button assembly 35. As seen in Fig. 7, the leg cradle support bracket 32 pivots at the top of inner support tube 30, with travel the direction of rotational movement being illustrated by letter E.

Please replace the paragraph on page 8 beginning “Fig. 9 shows” with the following amended paragraph:

Fig. 9 shows a side elevational view of a walker 51 for a right leg injury. Reference line J[.] shows the vertical center balance point of the seat assembly 64 to stabilization foot assembly 25 forward of foot support tube 70.

Please replace the paragraph on page 8 beginning “Fig. 11 refers to” with the following amended paragraph:

Fig. 11 refers to construction details view is a left side partial cutaway view of the lower portion of the frame support post 60 and the attached stabilization foot assembly 25 and its foot support tube 70. Certain subassemblies of the invention show a fragmentary vertical section of an enlarged view. The series of height adjustment holes 65 spaced at equal distances, protruding through lower end of offset frame support post 60 are readily seen in U.S. Patent No. 5,178,595. Fig. 11 shows safety knob with threaded shaft 67, threading through safety collar assembly 66, diagonally passing through equally spaced height adjustment holes 65, in offset frame support post 60, also passing through equally spaced foot support tube holes 26, in foot support tube 70. This presses up against the inner support surface of tube

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70, which presses outer surface of tube 70 to inner wall of offset frame support post 60, locking the two tubes together and giving a second means of fixing both tubes 60 and 70 to a desired height. Tightening the control knob 67 by hand can eliminate a slight amount of play between offset frame support post 60 and foot support tube 70. This will eliminate a clicking noise, which would be produced between these two support tubes and will minimize war on the height adjustment button 68 thus promoting safety.

Please replace the paragraph on page 8 beginning "Fig. 11 shows greater" with the following amended paragraph:

Fig. 11 shows greater detail of the stabilization foot assembly 25, which is comprised of a foot support tube 70, that is welded to an upper stabilization plate 72, and one or more gussets 71 by means of a weld at right angles to achieve a 90 degree relationship between foot support tube 70 and upper stabilization plate with threaded holes 72. It should be noticed recognized that the tube 70 has been positioned just forward of the rear trailing edge of plate 72, and centered similar to the proportions of the human foot. Located below the mounting plate 72 is a thick layer of foam 23 which can vary in density to accommodate the weight of the injured individual. Located below the foam 23 is the lightweight titanium or like stabilization plate 24, which is affixed to the rubber tread with reinforcement cord 22, by means of contact cement or the like. The rubber tread with reinforcement cord 22 has four mounting holes, two in front and tow in the rear. Rubber tread mounting bars 73, with equally spaced matching holes are placed over the rubber tread 22. Mounting bar cap screws 21, pass through these aligned holes and thread into matching threaded holes in the upper mounting plate 72. The rubber treads with cord wraps from the front to the rear of foot assembly 25, encapsulating the stabilization plate and foam in a tight, flat and secure manner. This stabilization foot assembly 25 can be made in varying sizes to facilitate a wider, more stable base for some users or a smaller, more lightweight base for the experienced user.

Please replace the paragraph on page 9 beginning "Fig. 13 shows" with the following amended paragraph:

Fig. 13 shows a phantom person using the improved ergonomically designed walker frame 51, with left lower leg demonstrating flexion 53, ~~below~~ below the knee 43, with a leg cradle with no Velcro® strap. One is able to mount the walker without attaching a strap and to ambulate without being strapped in, but merely resting upon the leg cradle 33 without being restrained. This ~~new-improved~~ feature makes it far safer to get rid of the walker in case of fall.

Please replace the paragraph on page 10 beginning "Fig. 15 shows" with the following amended paragraph:

Fig. 15 shows a phantom person using a left injured leg ergonomically designed walker frame 51, with leg cradle supporting a partial leg amputated below the knee with no Velcro® strap or breakaway buckles. The phantom person is standing at a normal height resting comfortably on the stabilization foot maintaining good balance. Figs. 1, 13, 14 and 15 all show a phantom person demonstrating proprioception of the stabilization foot by means of wrist 39 and hand 47.